THE ASTROPHYSICAL JOURNAL

AUTHOR INDEX

PARTS 1 & 2, VOLUMES 582 – 584

2003 JANUARY 1 TO FEBRUARY 20

ABBETT, W. P. A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

ABT, HELMUT A. Post–Main-Sequence Changes in Rotational Velocities. *Helmut A. Abt.* 582, 420 (2003)

ACOSTA-PULIDO, J. A. The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

ADELBERGER, K. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

ADELBERGER, KURT L. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

AGAFONOVA, I. I. Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

AHRENS, J. Search for Point Sources of High-Energy Neutrinos with AMANDA. *J. Ahrens, X. Bai, G. Barouch, S. W. Barwick, R. C. Bay, T. Becka, K.-H. Becker, D. Bertrand, F. Binon, A. Biron, S. Boeser, O. Botner, A. Bouchta, O. Bouhali, T. Burgess, S. Carius, T. Castermans, D. Chirkin, J. Conrad, J. Cooley, D. F. Cowen, A. Davour, C. De Clercq, T. DeYoung, P. Desiati, J.-P. Dewulf, P. Doksus, J. Edsjö, P. Ekström, T. Feser, T. K. Gaisser, M. Gaug, L. Gerhardt, A. Goldschmidt, A. Hallgren, F. Halzen, K. Hanson, R. Hardtke, T. Hauschildt, M. Hellwig, P. Herquet, G. C. Hill, P. O. Hulth, K. Hultqvist, S. Hundertmark, J. Jacobsen, A. Karle, J. Kim, L. Köpke, M. Kowalski, K. Kuehn, J. I. Lamoureux, H. Leich, M. Leuthold, P. Lindahl, J. Madsen, P. Marciniewski, H. Matis, C. P. McParland, T. C. Miller, Y. Minaeva, P. Miocinović, P. C. Mock, R. Morse, T. Neunhöffer, P. Niessen, D. R. Nygren, H. Ögelman, P. Olbrechts, C. Pérez de los Heros, A. C. Pohl, P. B. Price, G. T. Przybylski, K. Rawlins, E. Resconi, W. Rhode, M. Ribordy, S. Richter, J. Rodríguez Martino, P. Romenesko, D. Ross, H.-G. Sander, T. Schmidt, D. Schneider, R. Schwarz, A. Silvestri, M. Solarz, G. M. Spiczak, C. Spiering, D. Steele, P. Steffen, R. G. Stokstad, K.-H. Sulanke, I. Taboada, L. Thollander, S. Tilav, C. Walck, C. Weinheimer, C. H. Wiebusch, C. Wiedemann, R. Wischnewski, H. Wissing, K. Woschnagg, W. Wu, G. Yodh, & S. Young (The AMANDA Collaboration).* 583, 1040 (2003)

AJHAR, EDWARD A. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

AKESON, RACHEL L. Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

AKIYAMA, SHIZUKA. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

ALEXANDER, D. M. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

ALLAMANDOLA, LOUIS J. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

ALLEN, STEVEN W. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

ALLER, L. H. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

ALMEIDA, J. SANCHEZ. Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

AMANDA COLLABORATION, THE. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

AMENDOLA, LUCA. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

ANDERSON, SCOTT F. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

ANDRONOV, N. Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription from Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

ANFIMOV, DMITRIJ S. See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

ANGELINI, L. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

ANSORG, M. Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

ANTIOCHOS, S. K. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

APPLETON, P. N. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

APUNEVYCH, S. Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

ARAUJO-BETANCOR, S. System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

ARLANDINI, C. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

ARMENGAUD, ERIC. Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

ARMITAGE, PHILIP J. A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

ATKINS, R. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito. *R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, D. Evans, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, S. Klein, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, F. W. Samuelson, B. Shen, A. Shoup, C. Sinnis, A. J. Smith, G. W. Sullivan,*

T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh. 583, 824 (2003)

AUDARD, MARC. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

AXELROD, T. S. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

AYRES, THOMAS R. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

BACH, DAVID R. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

BACKER, D. C. Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

BACKMAN, D. E. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

BAEK, CHANG HYUN. Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

BAI, X. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BAILIN, JEREMY. Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

BAINES, G. P. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

BAKER, ANDREW J. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

BAKER, EMILY J. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

BALCELLS, M. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

BALCELLS, MARC. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

BALDWIN, J. A. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

BALLY, JOHN. X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

BALOGH, MICHAEL L. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

BALTZ, EDWARD A. Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

BANIA, T. M. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

BARGER, A. J. The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function.. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

BARKER, MICHAEL K. A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

BAROUCH, G. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BARRET, DIDIER. Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

BARRIS, BRIAN J. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

BARSONY, MARY. Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

BARTELMANN, MATTHIAS. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

BARTH, AARON J. The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

Optical Spectropolarimetry of the GRB 020813 Afterglow. *Aaron J. Barth, Re'em Sari, Marshall H. Cohen, Robert W. Goodrich, Paul A. Price, Derek W. Fox, J. S. Bloom, Alicia M. Soderberg, & Shrinivas R. Kulakarni.* 584, L47 (2003)

BARWICK, S. W. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BASRI, GIBOR. Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

BASTIAN, NATE. The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henny J. G. L. M. Lamers.* 583, L17 (2003)

BAUER, AMANDA. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

BAUER, F. E. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

BAUMGARDT, HOLGER. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

BAUMGARTE, THOMAS W. Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

BAUTZ, M. The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

BAUTZ, M. W. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

BAY, M. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

BAY, R. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BECK, TRACY L. Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

BECKA, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BECKER, K.-H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BECKLIN, E. E. The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

BEER, H. See SONNABEND, K., et al. The *s*-Process Branching at ^{185}W.

BEGELMAN, MITCHELL C. Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

BEHAR, E. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

BENBOW, W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

BENDEK, E. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

BENDER, RALF. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

BENNETT, C. L. The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

BENZ, A. O. Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

BERGER, E. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

BERGIN, EDWIN A. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

BERLEY, D. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

BERNARDI, MARIENGELA. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

BERNSTEIN, MAX P. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

BERSIER, D. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

The Strongly Polarized Afterglow of GRB 020405. *D. Bersier, B. McLeod, P. M. Garnavich, M. J. Holman, T. Gray, J. Quinn, J. Kaluzny, P. M. Challis, R. G. Bower, D. J. Wilman, J. S. Heyl, S. T. Holland, V. Hradecky, S. Jha, & K. Z. Stanek.* 583, L63 (2003)

The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability. *D. Bersier, K. Z. Stanek, J. N. Winn, T. Gray, M. J. Holman, T. Matheson, B. Mochejska, D. Steeghs, A. R. Walker, P. M. Garnavich, J. Quinn, S. Jha, K. H. Cook, W. W. Craig, P. J. Meintjes, & J. J. Calitz.* 584, L43 (2003)

BERTIN, G. Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

BERTRAND, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BETHELL, THOMAS J. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

BHAT, N. D. R. A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

BIERBAUM, VERONICA M. Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodor P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

BILDSTEN, LARS. Photodisintegration-Triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

BILLER, B. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

BINON, F. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BIRON, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BLACKMAN, ERIC G. Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

BLAIR, WILLIAM P. Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

BLAKESLEE, JOHN P. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

BLANDFORD, R. D. The Gravitational Lens B1608+656. I. *V*-, *I*-, and *H*-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

BLANDFORD, ROGER D. The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

BLAND-HAWTHORN, JOSS. The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

BLASI, PASQUALE. Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

BLOEMHOF, E. E. Suppression of Speckle Noise by Speckle Pinning in Adaptive Optics. *E. E. Bloemhof.* 582, L59 (2003)

BLONDIN, JOHN M. Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

BLOOM, J. S. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

BOCHSLER, P. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

BODENHEIMER, P. Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

BOESER, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BOESGAARD, ANN MERCHANT. Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

BOLDYREV, STANISLAV. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Scintillations and Levy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

BOLTON, C. T. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

BONAMENTE, M. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

BONAMENTE, MASSIMILIANO. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

BOND, H. E. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

BOND, I. H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

BOOTHROYD, ARNOLD I. Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

BOROSON, B. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

BOROZDIN, KONSTANTIN N. Observations of the X-Ray Afterglows of GRB 011211 and GRB 001025 by *XMM-Newton*. *Konstantin N. Borozdin & Sergey P. Trudolyubov.* 583, L57 (2003)

BOSS, ALAN P. On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

BOTHMER, V. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

BOTNER, O. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BOUCHTA, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BOUHALI, O. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BOWER, GARY. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

BOWER, R. G. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

BOWERS, CHARLES W. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

BOYLE, P. J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

BRADBURY, S. M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

BRAGAGLIA, A. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

BRANDENBURG, AXEL. Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

BRANDT, W. N. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

BRANDUARDI-RAYMONT, G. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

BRASSARD, P. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

BREGMAN, JOEL N. A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

BRESOLIN, FABIO. A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A supergiants/footnotemark. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

BREUGEL, WIL VAN. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

BRIDGES, T. J. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

BRIGGS, MICHAEL S. See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

BRINKMANN, J. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

BRINKMANN, JON. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

BRION, E. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

BRODWIN, M. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

BROGAN, C. L. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

BRONOWSKA, A. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

BROTHERTON, MICHAEL S. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

BROWN, ALEXANDER. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

BROWN, T. M. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

BROWN, THOMAS M. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

BROWNING, MATTHEW K. Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

BRUNT, CHRISTOPHER M. Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

BUCKLEY, J. H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

BUDIL, KIMBERLY S. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

BULLOCK, JAMES S. Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

BURGESS, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BURLAGA, L. F. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

BURROWS, ADAM. Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

BURROWS, DAVID N. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

BURWITZ, V. Discovery of a Binary Active Galaxy Nucleus in the Ultra-luminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

BUSSO, M. Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

BUTLER, R. PAUL. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

BUTT, Y. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

BUTT, YOUSAF. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

CAGNONI, I. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

CAI, MIKE J. Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

CALITZ, J. J. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

CALKINS, M. L. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

CALLERAME, K. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

CALLY, PAUL S. Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

CAMILO, F. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

CANTO, J. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodriguez, & J. Canto.* 582, L109 (2003)

CANTÓ, JORGE. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

CAPAK, P. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

CAPETTI, ALESSANDRO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

CARDENA, I. DOMINGUEZ. Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

CARDIEL, N. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

CARIUS, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

CARLBERG, R. G. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

CARLSTROM, JOHN E. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

CARSON, M. J. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

CARTER-LEWIS, D. A. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

CASARES, J. Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

CASINI, R. Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

CASSISI, SANTI. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

CASTANDER, F. J. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

CASTANDER, FRANCISCO J. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

CASTERMANS, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

CATANESE, M. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

CELOTTI, A. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

CESARES, J. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

CHAE, JONGCHUL. The Formation of a Prominence in NOAA Active Region 8668. II. Trace Observations of Jets and Eruptions Associated with Cancelling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

CHAKRABARTY, D. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.

CHALLIS, P. M. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

CHAPLIN, W. J. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

CHARLES, P. A. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

CHARLTON, JANE C. The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

CHARMANDARIS, V. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

CHATTERJEE, S. A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

CHEN, C. H. The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

CHEN, GANG. Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

CHEN, M. L. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

CHEN, XUELEI. Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

CHEN, Y. Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

CHENG, FUHUA. *Hubble Space Telescope* STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

CHEVALIER, R. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

CHIABERGE, MARCO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

CHIANG, E. I. Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

CHILLIER, XAVIER D.F. Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

CHIRKIN, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

CHOE, G. S. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

CHRISTOPOULOU, E. B. Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

CHU, MIKE. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

CHURCH, SARAH. The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

CHUSS, D. T. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

CIARDULLO, ROBIN. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

CLARKE, DAVID A. Three-dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

CLAUSSEN, M. J. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M.*

Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards. 583, 272 (2003)

CLEMENS, D. P. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

CLEMENTS, D. L. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

CLOSE, L. M. Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

CLOSE, LAIRD M. Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

COBLE, K. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

COE, M. J. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negeuruela.* 584, 996 (2003)

COGNARD, I. A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

COHEN, JUDITH G. The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

COHEN, M. H. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

COHEN, MARSHALL H. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

COHEN, MARTIN. The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

COLAFRANCESCO, SERGIO. A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

COLINA, LUIS. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

COLLINGS, M. P. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

COLLINS, BENJAMIN F. *Chandra* X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

COMITO, CLAUDIO. First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

CONNOLLY, ANDREW J. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

CONRAD, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

COOK, K. H. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

COOLEY, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

CORBEL, S. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

CORBEL, STÉPHANE. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

CORBETT, E. A. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

CORDES, J. M. A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

CORDES, O. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

CÓRDOVA, F. A. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

COSTA, E. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

COTTAM, J. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

COULSON, I. M. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

COURTEAU, STEPHANIE. Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

COVARRUBIAS, RICARDO. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

COVEY, KEVIN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

COWEI, L. L. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

COWEN, D. F. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

COWIE, L. L. The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

COX, DONALD P. Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

COX, PIERRE. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

COYNE, D. G. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

CRAIG, W. W. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

CRENSHAW, D. M. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

CRENSHAW, D. MICHAEL. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

CROTTS, ARLIN. Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

CRUZ, KELLE L. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

CSAK, B. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

CUI, W. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

CUMMING, ANDREW. Photodisintegration-Triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

CURDT, W. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

CURIEL, S. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodriguez, & J. Canto.* 582, L109 (2003)

CURIEL, SALVADOR. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

CUSHING, MICHAEL. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

CUTRI, R. M. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

DAIGNE, F. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

DALGARNO, ALEXANDER. Editorial: ApJ Letters Transitions. *Alexander Dalgarno.* 582, L1 (2003)

DALY, RUTH A. Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

DAMIANI, F. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

D'AMICO, N. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

DAS, MOUSUMI. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

DAVIES, R. I. The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

DAVIS, S. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

DAVIS, SUMNER P. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

DAVOUR, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DAWSON, KYLE S. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

DE BLOK, W. J. G. A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

DE BREUK, CARLOS. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

DE CLERCQ, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DECOURCHELLE, A. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

DE GRIJS, RICHARD. The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henny J. G. L. M. Lamers.* 583, L17 (2003)

DE JAGER, C. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

DE LA CALLE PEREZ, I. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

DELLA VALLE, M. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

DEMARINO, CHRISTINE. Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

DEMING, DRAKE. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

DENT, W. R. F. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

DERE, K. P. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

DESIATI, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DE SOUZA, R. E. NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

DESSAUGES-ZAVADSKY, M. Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

DEVER, J. W. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

DEWULF, J.-P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DEY, JISHNU. Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

DEY, MIRA. Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

DEYOUNG, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DHILLON, V. S. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

DICKEY, JOHN M. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

DIETRICH, M. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

DIETRICH, MATTHIAS. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

DIKPATI, MAUSUMI. Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

DI MATTEO, TIZIANA. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

DINESCU, DANA I. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]). *Dana I. Dinescu, Steven R. Majewski, Terrence M. Girard, Réné A. Mendez, Allan Sandage,*

Michael H. Siegel, William E. Kunkel, John P. Subasavage, & Jamie Ostheimer. 582, L125 (2003)

DINGUS, B. L. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

DJORGOVSKI, S. G. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

DODELSON, S. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

D'ODORICO, S. Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

DOI, MAMORU. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

DOKSUS, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DOLAG, KLAUS. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

DOMÍNGUEZ, IMMACULADA. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

DOMINGUEZ-PALMERO, LILIAN. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

DONAHUE, MEGAN. Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

DONG, XIAO-BO. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

DOPITA, M. A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

DORFAN, D. E. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

DOTSON, J. L. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

DOWDALL, C. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

DOWNES, D. Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

DRAGOVAN, M. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

DRAKE, JEREMY J. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

DREIZLER, S. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

DRESSLER, ALAN. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

DROSBACK, MEREDITH M. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

DUKE, C. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

DULEY, W. W. Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

DUNLEA, S. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

DUNLOP, J. S. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

DUNN, J. P. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

DUNNE, L. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

DUPKE, RENATO. *Chandra* Analysis of Abell 496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

DUPREE, A. K. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

DURRELL, PATRICK R. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

DURRER, R. Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

D'VALI, M. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

DWIVEDI, B. N. On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

DWORKIN, JASON P. Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

EALES, S. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

EBELING, HARALD. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

EDELMANN, H. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

EDELSON, RICK. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

EDGAR, R. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

EDGE, ALASTAIR. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

EDSJÖ, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

EIKENBERRY, STEPHEN S. SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

EKSTRÖM, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

ELBAZ, D. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

ELLSWORTH, R. W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

ELSILA, JAMIE E. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

ELSWORTH, Y. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

ELVIS, M. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

ENOMOTO, R. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

ERACLEOUS, MICHAEL. The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

ESPOSITO, LARRY W. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

ESPRESATE, JULIA. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

ESSER, R. Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

EVANS, A. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

EVANS, D. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

EVANS, N. W. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

EVANS, NEAL J., II. Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

EXTER, K. M. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

FABBIANO, G. Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

FABER, S. M. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

FABIAN, ANDREW C. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

FABIAN, DIRK. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

FALCO, E. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

FALCONE, A. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

FALTER, S. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

FAN, XIAOHUI. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

FAN, Y. The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

FEGAN, D. J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

FEGAN, S. J. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

FEIGELSON, ERIC. X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

FEIGELSON, ERIC D. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

FELDMAN, U. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

FELDMEIER, JOHN J. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

FENDER, R. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

FENDER, ROB. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

FENG, X. S. Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

FERGUSON, HENRY C. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

FERLAND, G. J. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

FERRANDO, P. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

FERRARO, F. R. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

FESER, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

FILIPPENKO, ALEXEI V. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

FILLIPENKO, ALEXEI V. Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

FINGER, MARK H. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negeuruela.* 584, 996 (2003)

FINLEY, J. P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

FISCHER, DEBRA A. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

FISHER, G. H. A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

FLACCOMIO, E. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

FLEISHMAN, G. D. Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

FLEYSHER, L. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

FLEYSHER, R. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

FOLTZ, C. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

FONG, D. Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

FONTAINE, G. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

FORTSON, L. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

FOUCAUD, S. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

FOX, ANDREW J. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

FOX, D. W. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

FOX, DEREK W. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

FRAIL, D. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

FRANK, A. Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

FRASER, H. J. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

FREED, MELANIE. Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

FREITAG, MARC. Gravitational Waves from Stars Orbiting the Sagittarius A Black Hole. *Marc Freitag.* 583, L21 (2003)

FREY, NATALIE. Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

FRIEDMAN, S. D. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

FRIEDMAN, SCOTT D. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

FRITH, JAMES. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

FRONING, CYNTHIA S. Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

FRONTERA, F. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

FUJITA, YUTAKA. Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

FUNATO, YOKO. To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

FURUSAWA, HISANORI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

FUTAMASE, TOSHIFUMI. The Topology of Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

GABEL, J. R. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

GABEL, JACK R. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A., Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

GABICI, STEFANO. Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

GADOTTI, D. A. NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

GÄNSICKE, BORIS T. *Hubble Space Telescope* STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

GAENSLER, B. M. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.

GAETZ, T. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

GAFFNEY, JAMES A., III. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

GAGLIARDI, SIMONA. Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

GAIDOS, J. A. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

GAISSER, T. K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

GALAMA, T. J. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

GALAZ, G. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

GALLEGO, J. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

GALLIMORE, J. F. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

GALLINO, R. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

See SONNABEND, K., et al. The *s*-Process Branching at ^{185}W.

GALSGAARD, K. Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

GAMMELL, S. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

GANGA, K. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

GANGADHARA, R. T. Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

GARDINER, T. A. Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

GARMINE, G. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

GARMIRE, G. P. The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

GARMIRE, GORDON. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

GARMIRE, GORDON P. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

GARNAVICH, P. M. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

GAUG, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

GAWISER, E. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

GEAR, W. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

GEAR, W. K. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

GEBALLE, T. R. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

GEBHARDT, KARL. Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

GEHRZ, R. D. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

GELLER, MARGRET J. Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

GENZEL, REINHARD. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

GEORGAKILAS, A. A. Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

GEORGANTOPOULOS, I. SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

GEORGE, I. M. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

GEORGE, IAN M. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

GEORGE, NATHAN D. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

GERHARDT, L. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

GHAVAMIAN, PARVIZ. Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

GIBBS, K. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

GIBLIN, TIMOTHY W. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

GIEREN, WOLFGANG. Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

GIERLINSKI, MAREK. Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

GIES, D. R. Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

GILBANK, D. G. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

GILLANDERS, G. H. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

GILLESPIE, ELIZABETH BARTON. Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

GILLI, ROBERTO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

GILLILAND, RONALD L. Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

GILMAN, PETER A. Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

GIOVANNI, M. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

GIRARD, TERRENCE M. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

GIRART, J. M. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodriguez, & J. Canto.* 582, L109 (2003)

GISLER, G. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

GLADDERS, MICHAEL D. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

GLAZEBROOK, K. The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

GLICENSTEIN, J. -F. Exotic Lensing Corrections to the Microlensing Optical Depth. *J. -F. Glicenstein.* 584, 278 (2003)

GLIOZZI, MARIO. Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

GLOVER, SIMON C. O. Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

GNEDIN, NICKOLAY Y. Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney,*

Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet. 583, 525 (2003)

GNEDIN, OLEG Y. Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

GOLDONI, P. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

GOLDREICH, PETER. Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)

GOLDSCHMIDT, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

GOLDWURM, A. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

GÓMEZ, DANIEL O. Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

GOMEZ, PERCY L. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark Subbarao, & Donald G. York.* 584, 210 (2003)

GONZALEZ, ANTHONY H. On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

GONZALEZ, M. M. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

GONZALEZ, MARJORIE. New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

GONZALEZ DELGADO, ROSA. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

GOODMAN, J. A. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

GOODRICH, ROBERT W. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

GOPALSWAMY, N. A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

GOSS, W. M. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

GOTO, TOMOTSUGU. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

GOTTHELF, E. V. *Chandra* X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

GOUKENLEUQUE, CEDRIC. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

GOULD, ANDREW. Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

GRAHAM, ALISTER W. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

GRANOT, JONATHAN. The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

GRANT, C. E. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

GRATTON, R. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

GRAV, T. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

GREAVES, J. S. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

GREEN, E. M. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Ostensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

GREEN, P. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

GREEN, RICHARD. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

GREENE, T. P. Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

GREENHILL, L. J. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

GRIFFIN, G. S. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

GRIFFITH, C. A. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

GRILLMAIR, CARL. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

GRISHKO, V. I. Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

GROVES, B. A. Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

GU, M. F. Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

GUDIPATI, MURTHY S. Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

GÜDEL, MANUEL. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

GUETTA, DAFNE. Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

GUILLOTEAU, STÉPHANE. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

GUINAN, EDWARD F. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

GUPTA, Y. Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

GWINN, CARL. Scintillations and Levy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

GYUK, GEZA. Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

HAARDT, FRANCESCO. The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

HACHISU, IZUMI. Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

HAGENAAR, HERMANCE J. The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

HAGLIN, DAVID J. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

HAIMAN, ZOLTAN. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

HAINES, T. J. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

HAKKILA, JON. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

HALL, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

HALL, PATRICK B. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

HALL, T. A. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

Search for TeV Emissions from Pulsars in Binary Systems. *T. A. Hall, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, S. Dunlea, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, G. H. Gillanders, A. M. Hillas, D. Horan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, J. Quinn, P. T. Reynolds, H. J. Rose, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, & T. C. Weekes.* 583, 853 (2003)

HALLGREN, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HALPERN, J. P. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

HALPERN, JULES P. The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

HALPERN, M. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

HALZEN, F. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HAMABE, MASARU. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

HAMANN, F. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

HAMANN, FREDERICK W. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

HAMUY, MAROI. Observed and Physical Properties of Core-Collapse Supernovae. *Maroi Hamuy.* 582, 905 (2003)

HANAWA, TOMOYUKI. A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

HANSEN, BRAD M. S. Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

HANSON, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HARDEE, PHILIP E. The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

HARDTKE, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HARDY, IAN M. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

HARFORD, A. GAYLER. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

HARNDEN, F. R., JR. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

HARPER, GRAHAM M. Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

HARRINGTON, JOSEPH. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

HARRIS, ANDREW I. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

HARRIS, HUGH. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

HARRISON, F. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

HARTIGAN, PATRICK. A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

HARTMANN, L. Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

HARVEY, DANIEL W. A. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

HASHIMOTO, YOSHIKAZU. To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

HASINGER, G. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

HAUSCHILDT, P. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

HAUSCHILDT, P. H. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

HAUSCHILDT, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HAWLEY, SUZANNE. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

HAYASHI, ERIC. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

HAYASHINO, TOMOKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

HEIL, M. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

HEISLER, C. A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

HEITSCH, FABIAN. Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

HELENIUS, LOUISE. Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

HELFAND, DAVID J. *Chandra* X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

HELLWIG, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HENDEN, A. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

HENNING, TH. Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

HENRIKSEN, MARK J. A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

HENRY, GREGORY W. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

HERMAN, M. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

HERNANZ, M. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

HERQUET, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HERRERO, AREMIO. Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

HEYL, J. S. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

HICKS, AMALIA K. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

HIGDON, J. C. The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

HILL, G. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HILLAS, A. M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

HILLENBRAND, LYNNE A. Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

HINSHAW, G. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

HIRANO, NAOMI. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

HO, LUIS C. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

HOARD, D. W. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

HOBBS, L. M. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

HOBBS, LEWIS M. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

HOFFMAN, C. M. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

HOFFMAN, I. M. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

HOLDER, GILBERT P. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

HOLDER, J. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope. *J. Holder, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, W. Cui, C. Dowdall, C. Duke, I. de la Calle Perez, A. Falcone, D. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawcynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Mueller, T. N. Nagai, R. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 583, L9 (2003)

HOLLAND, S. T. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

HOLLAND, W. S. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

HOLLENBACH, DAVID J. Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

HOLMAN, M. J. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

HOLTZMAN, J. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

HOLTZMAN, JON A. Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

HOLZAPFEL, WILLIAM L. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

HONDA, MITSUHIKO. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

HOPKINS, ANDREW M. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

HORAN, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

HORNER, DONALD J. Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

HORNSCHEMEIER, A. E. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

HOWARD, R. A. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

HOWE, JOHN E. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

HOWELL, STEVE B. *Hubble Space Telescope* STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti.

Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell. 583, 907 (2003)

HOWK, J. CHRISTOPHER. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

HRADECKY, V. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

HU, WAYNE. Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

HU, Y. Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

HUANG, J. -S. The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

HUANG, J.-S. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

HUANG, W. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

HUDSON, DANIEL S. A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

HUGENBERGER, S. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

HUGHES, JOHN P. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

HUGHES, PHILIP A. The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

HULTH, P. O. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HULTQVIST, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HUNDERTMARK, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HURLEY, K. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

HUT, PIET. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

HYDE, E. A. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

HYNES, R. I. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

HYUNG, S. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

IBEN, ICKO, JR. Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

IBRAHIM, ALAA I. New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

IKEBE, Y. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

ILYIN, I. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

IMBRIANI, GIANLUCA. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

INFANTE, L. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

INNES, D. E. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

INOE, SUSUMU. Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

IOKA, KUNIHITO. Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

IP, WING-HUEN. On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

IPAVICH, F. M. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

ISAAK, G. R. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

ISRAELIAN, G. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

ITOH, C. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

IVISON, R. J. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

JACKSON, C. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

JACKSON, JAMES M. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

JACOBSEN, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

JACOBY, GEORGE H. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

JAFFE, A. H. Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

JAIN, BHUVNESH. The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

JAROSIK, N. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

JAUNCEY, D. L. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

JEFFERY, E. J. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

JEFFERYS, WILLIAM H. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

JENSEN, ADAM G. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

JENSEN, ERIC L. N. Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

JENSEN, JOSEPH B. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

JESSBERGER, ELMAR K. Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

JHA, S. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

JI, JIAN FENG. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

JI, JIANGHUI. Erratum: "The Dynamical Simulations of the Planets Orbiting GJ 876" (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

JIANG, ING-GUEY. On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

JIMÉNEZ BAILÓN, ELENA. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

JING, JU. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

JORDAN, M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

JOY, MARSHALL. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

JUDA, M. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

JURA, M. The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

A Flared, Orbiting, Dusty Disk around HD 233517. *M. Jura.* 582, 1032 (2003)

A Tidally Disrupted Asteroid around the White Dwarf G29-38. *M. Jura.* 584, L91 (2003)

JURGENSON, C. A. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

KAARET, P. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

KAARET, PHILIP. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

KAASTRA, J. S. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

KÄPPELER, F. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

See SONNABEND, K., et al. The *s*-Process Branching at ^{185}W.

KAHLER, S. W. Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

KAHN, STEVEN M. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

KAISER, MARY ELIZABETH. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

KAISER, NICK. Cosmological Perturbation Theory Using the Schrödinger Equation. *Istvan Szapudi & Nick Kaiser.* 583, L1 (2003)

KALLENBACH, R. Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

KALLMAN, T. R. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

KALLMAN, TIMOTHY R. Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

KALOGERA, V. The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

KALUZNY, J. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

KAMAZAKI, TAKESHI. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

KANE, STEPHEN R. Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

KANG, HYESUNG. Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

KAPLINGHAT, MANOJ. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

KARLE, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KARPEN, J. T. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

KASDIN, N. JEREMY. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

KASHLINSKY, A. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

KASHYAP, VINAY L. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

KASPI, SHAI. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

KASTNER, JOEL H. On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

KATAOKA, JUN. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

KATAZA, HIROKAZU. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

KATO, MARIKO. Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

KAUFMAN, MICHAEL J. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

KAWABE, RYOHEI. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

KAWAKATU, NOZOMU. Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

KAWAKITA, HIDEYO. Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

KEEL, W. C. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

KEENAN, F. P. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

KEENEY, BRIAN A. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.
KEETON, CHARLES R. Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)
Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)
KELLERMANN, K. I. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)
KELLEY, L. A. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.
KELSO, CHRISTOPHER M. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.
KEMP, J. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.
KENDZIORRA, E. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.
KENNICUTT, ROBERT C., JR. Editorial: Editorial Transitions. *Robert C. Kennicutt, Jr.* 582, 1 (2003)
KENTER, A. T. A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)
KENYON, S. J. CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)
CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)
KENYON, SCOTT J. Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)
A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)
KERBER, F. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)
KERES, DUSAN. CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\mathrm{H\ I+H_2}}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)
KERTZMAN, M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.
KEWLEY, L. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.
KEWLEY, L. J. Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)
KHEYFETS, ARKADY. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)
KIEDA, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.
KILDEA, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.
KIM, C. The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)
KIM, D. W. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)
KIM, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
KIM, S. J. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)
KIMBLE, R. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.
KIMBLE, RNADY A. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)
KIMURA, HIROSHI. Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)
Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)
KIMURA, MASHIKO. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.
KING, A. R. The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)
KING, JEREMY R. Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)
Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)
KIRBY, K. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)
$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)
The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)
KIRKPATRICK, J. DAVY. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)
KIRSHNER, R. P. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.
KISS, L. L. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.
KLAHR, H. H. Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)
KLAPPER, GABRIELE. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)
KLEBE, D. I. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)
KLEIN, RICHARD I. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)
KLEIN, S. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.
KLEINWÄCHTER, A. Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)
KLIMCHUK, J. A. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)
KLOSE, S. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.
KNAPP, GILLIAN R. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.
KNAPP, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.
KNEER, F. Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)
KNIGGE, C. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

KNIGGE, CHRISTIAN. Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

KNOX, L. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

KNOX, LLOYD. The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

KOBAYASHI, SHIHO. GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

KOCHANEK, C. S. Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

KODAIRA, KEIICHI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

KOENIGSBERGER, GLORIA. A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

KOERNER, D. W. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

KOGUT, A. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

KOLPAK, MICHAL A. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

KOMIYAMA, YUTAKA. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

KOMOSSA, S. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

KONDRAKTO, P. T. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

KOO, D. C. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, S. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

KOOPMANS, LÉON V. E. The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

KÖPKE, L. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KORISTA, K. T. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

KORMENDY, JOHN. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

KOSACK, K. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

KOVAC, J. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

KOWALSKI, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KRAEMER, S. B. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

KRAEMER, STEVEN B. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

KRAUTTER, JOACHIM. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

KRAVTSOV, ANDREY V. Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

KRAWCYNSKI, H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

KRENNRICH, F. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

KRISCIUNAS, K. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

KRISHNAMURTHI, ANITA. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

KRISS, GERARD A.,. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

KUBIAK, M. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

KUDOH, TAKAHIRO. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

KUDRITZKI, ROLF P. A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A supergiants/footnotemark. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

KUDRITZKI, ROLF-PETER. Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

KUEHN, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KUIPER, T. B. H. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

KULAKARNI, SHRINIVAS R. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

KULKARNI, S. R. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

KUMAR, PAWAN. X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

KUNKEL, WILLIAM E. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

KUNTZ, K. D. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

LAMB, DON Q. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

LAMB, R. C. Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

LAMERS, HENNEY J. G. L. M. The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henny J. G. L. M. Lamers.* 583, L17 (2003)

LAMING, J. MARTIN. On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

LAMOUREUX, J. I. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LANDI, E. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

LANG, M. J. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

LANGER, WILLIAM. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

LANZA, A. F. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

LANZAFAME, A. C. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

LA PAROLA, V. Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

LAROQUE, SAMUEL J. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

LAUER, TOD R. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

LAUGHLIN, GREGORY. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

LAUROESCH, JAMES. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

LAWLOR, T. M. Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

LAWRENCE, CHARLES R. The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

LAWTON, BRANDON. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

LEBOHEC, S. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

LEE, JEONG-EUN. Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

LEE, JEONGWOO. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

LE FÈVRE, O. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

LEICH, H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LEITHERER, CLAUS. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

LEONOR, I. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

LE PAGE, VALERY. Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodor P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

LESSARD, R. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

LESTRADE, J.-F. A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

LEUTHOLD, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LEVINSON, AMIR. Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

LEVSHAKOV, S. A. Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

LEWEN, FRANK. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

LEWIN, W. H. G. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.

LEWIS, KAREN T. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

LI, AIGEN. Cosmic Needles versus Cosmic Microwave Background Radiation. *Aigen Li.* 584, 593 (2003)

LI, CHENG. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

LI, GUANGYU. Erratum: "The Dynamical Simulations of the Planets Orbiting GJ 876" (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

LI, TI PEI. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

LI, ZHI-YUN. Erratum: "Fragmentation of Magnetically Subcritical Clouds into Multiple Supercritical Cores and the Formation of Small Stellar Groups" (ApJ, 578, 256 [2002]). *Zhi-Yun Li & Fumitaka Nakamura.* 583, 1063 (2003) (Orig. paper in 578, 256 (2002))

LICHTENSTADT, ITAMAR. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

LIEBERT, JAMES. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

LIEDAHL, DUANE A. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

LIEU, R. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

LILLY, S. J. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

LIMON, M. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

LIN, YEN-TING. Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

LINDAHL, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LING, J. C. BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)

LINGENFELTER, R. E. Limits to the Casseiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

LINSKY, JEFFREY L. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

LINTON, E. T. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

LIS, D. C. From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

LISTER, M. L. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

LITHWICK, YORAM. Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)

LITTMAN, MICHAEL G. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

LITVAK, MAXIM L. See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

LIU, JI-FENG. A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

LIU, LIN. Erratum: "The Dynamical Simulations of the Planets Orbiting GJ 876" (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

LIU, MICHAEL C. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

LLOYD-EVANS, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

LOBEL, A. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

LOEWENSTEIN, R. F. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

LOINARD, LAURENT. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

LONG, K. S. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

LONG, KNOX S. Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

LOPEZ-ARISTE, A. Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

LORIMER, D. R. The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

LOVELL, J. E. J. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

LOW, B. C. Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

LOWRANCE, PATRICK J. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

LUMB, D. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

LUO, Q. Y. Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

LUTZ, DIETER. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

LYFORD, NICHOLAS D. Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

MA, CHUNG-PEI. Schechter Versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

MACARTHUR, LAUREN A. Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

MACCHETTO, F. DUCCIO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

MACDONALD, J. Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

MACNEICE, P. J. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

MACOMB, D. J. Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

MADAU, PIERO. The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

MADORE, B. F. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

MADSEN, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MAGORRIAN, JOHN. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

MAHAJAN, SWADESH M. Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

MAITIA, V. A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

MAJEWSKI, STEVEN R. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

MAKINO, JUNICHIRO. To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

MALLÉN-FULLERTON, G. M. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

MALLÉN-ORNELAS, G. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

MANCHESTER, RICHARD N. Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

MANN, INGRID. Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

MARASCHI, L. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

MARCINIEWSKI, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MARCY, GEOFFREY W. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

MARDONES, DIEGO. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

MARGON, BRUCE. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

MARKEVITCH, M. *Chandra* Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

MARKOWITZ, ALEX. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

MARSTON, A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

MARTOS, MARCO. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

MAS-HESSE, J. MIGUEL. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

MASON, K. O. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

MATHER, J. C. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

MATHESON, T. The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins, F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek.* 582, L5 (2003)

See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

MATHUR, SMITA. Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

MATIS, H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MATSUBARA, TAKAHIKO. Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

MATSUDA, YUICHI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

MATSUMOTO, TOMOAKI. A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

MCCALL, B. J. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

MCCALL, BENJAMIN J. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

MCCARTHY, C. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

MCCARTHY, P. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

MCCOUSTRA, M. R. S. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

MCCRACKEN, H. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

MCCULLOUGH, J. F. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

MCDONALD, F. B. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

MCENERY, J. E. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

MCGAUGH, STACY S. A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

MCGHEE, JOHN M. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

MCHARDY, I. M. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

MCKEE, CHRISTOPHER F. Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

MCKERNAN, B. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

MCKERNAN, BARRY. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

MCLEOD, B. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

MCMILLAN, STEVE. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

MCPARLAND, C. P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MCSWAIN, M. V. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

MEDEJSKI, GREG M. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

MEEGAN, CHARLES A. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

MEIER, DAVID L. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

MEINEL, R. Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

MEINTJES, P. J. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

MEIXNER, M. Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

MELNICK, GARY J. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

MELNIKOV, V. F. Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

MENDEZ, M. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.

MENDEZ, RÉNÉ A. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

MENGONI, A. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.
See SONNABEND, K., et al. The *s*-Process Branching at ^{185}W.
MENOU, KRISTEN. Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)
MENTEN, K. M. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)
MENTEN, KARL M. Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)
MÉSZÁROS, P. Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)
METCHEV, STANIMIR A. Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)
MEYER, DAVID M. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)
MEYER, S. S. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.
MEZZACAPPA, ANTHONY. Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)
MICELA, G. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)
Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)
MICELI, ANTONINO. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.
MICHAŁEK, G. A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)
MIGNANI, ROBERTO P. Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)
MIHOS, J. CHRISTOPHER. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)
MILLER, AMBER D. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.
MILLER, B. A. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)
MILLER, CHRISTOPHER L. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.
MILLER, J. M. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)
XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Mendez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)
MILLER, JON M. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)
MILLER, R. S. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.
MILLER, T. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
MILLER, WARNER A. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)
MINAEVA, Y. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
MINCER, A. I. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.
MININNI, PABLO D. Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)
MINNITI, D. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)
MIOCINOVIĆ, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
MISRA, R. Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)
MISRA, RANJEEV. Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)
MITROFANOV, IGOR G. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events. *Igor G. Mitrofanov, Anton B. Sanin, Dmitrij S. Anfimov, Maxim L. Litvak, Michael S. Briggs, William S. Paciesas, Geoffrey N. Pendleton, Robert D. Preece, & Charles A. Meegan.* 584, 904 (2003)
MIYATA, TAKASHI. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)
MIYAZAKI, MASAYUKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.
MIYAZAKI, SATOSHI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.
MOCHEJSKA, B. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.
MOCK, P. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
MOHAN, A. On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)
MOHANTY, SUBHANJOY. Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)
MOHR, JOSEPH J. Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)
MOHR, P. See SONNABEND, K., et al. The *s*-Process Branching at ^{185}W.
MOON, DAE-SIK. SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)
MOORE, MARLA H. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)
MORALES, M. F. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.
MORAN, J. M. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)
MORENO, EDMUNDO. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)
MORI, MASAO. Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)
MORIARTY, P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

MORRISON, N. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

MORSE, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MORY, MATTHEW P. Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

MOSCADELLI, L. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

MOTOHARA, K. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

MOTTE, F. From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

MUELLER, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

MÜLLER, HOLGER S. P. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

MUKAI, K. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

MUKHOPADHYAY, BANIBRATA. Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

MULLAN, D. J. Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

MULLER, D. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

MUNDELL, C. G. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

MUNSHI, DIPAK. How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

MURPHY, THOMAS. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

MURRAY, S. S. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

MUSAEV, F. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

MUSHOTZKY, RICHARD F. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

MYERS, PHILIP C. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

NAGAI, DAISUKE. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

NAGAI, T. N. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

NAGHIGHIPOUR, NADER. On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

NAKAMOTO, TAISHI. A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

NAKAMURA, FUMITAKA. Erratum: "Fragmentation of Magnetically Subcritical Clouds into Multiple Supercritical Cores and the Formation of Small Stellar Groups" (ApJ, 578, 256 [2002]). *Zhi-Yun Li & Fumitaka Nakamura.* 583, 1063 (2003) (Orig. paper in 578, 256 (2002))

NAKATA, FUMIAKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

NAKAZATO, TAKESHI. A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

NANDRA, K. SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

NANDRA, KIRPAL. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

NARAYAN, RAMESH. Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

NARAYANAN, VIJAY. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

NAVARRO, JULIO F. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

NEGEURUELA, IGNACIO. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negeuruela.* 584, 996 (2003)

NEMETHY, P. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

NESS, N. F. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

NETZER, HAGAI. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

NEUKIRCH, T. Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

NEUNHÖFFER, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

NEVALAINEN, J. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

NEW, R. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

NEWCOMB, M. G. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

NEYRINCK, MARK C. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

NICHOL, ROBERT C. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

NIESSEN, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

NIEUWENHUIJZEN, H. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

NISHI, K. Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

NOBILI, L. A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

NOLL, K. S. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

NOLLETT, KENNETH M. Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

NORDLUND, AKE. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

NORRIS, R. P. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

NOUSEK, JOHN A. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

NOVAK, G. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

NOVOSYADLYJ, B. Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

NUZA, SEBASTIAN E. Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastian E. Nuza.* 583, L25 (2003)

NYGREN, D. R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

O'BRIEN, K. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

O'BRIEN, P. T. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

ODENWALD, S. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

ÖZEL, FERYAL. The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

ÖGELMAN, H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

OGLE, P. M. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

OGURI, MASAMUNE. Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

OHNO, HIROSHI. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

OKA, T. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

OKA, TAKESHI. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

OKAMOTO, YOSHIKO K. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

OKAMURA, SADANORI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

OLBRECHTS, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

OLIVE, JEAN-FRANCOIS. Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

OLIVIER, E. A. On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

OMONT, ALAIN. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

ONAKA, TAKASHI. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

ONG, R. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

ORIO, M. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

OROSZ, J. A. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

OROSZ, JEROME A. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

OSTEN, RACHEL A. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

OSTENSEN, R. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

OSTHEIMER, JAMIE. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

OUCHI, MASAMI. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Mashiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

OUYED, RACHID. Three-dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

OZEL, FERYAL. Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

PACIESAS, WILLIAM S. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

PACINI, FRANCO. Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

PADOAN, PAOLO. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

PAERELS, FREDERIK. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

PAESOLD, G. Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

PAGE, L. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

PAGE, M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

PAGE, M. J. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

PAIN, C. C. Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

PAK, IGOR. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

PALLASSINI, R. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

PALTANI, STÉPHANE. Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

PAPADOPOULOS, P. P. Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

PAQUETTE, J. A. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

PARKE, WILLIAM. New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

PARRAVANO, ANTONIO. Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

PASQUI, ALESSANDRO. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

PATEL, SANDEEP K. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

PATTERSON, J. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

PAVLOV, GEORGE G. Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

PEDLAR, A. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

PEIMBERT, ANTONIO. The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

PELETIER, REYNIER F. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

PENCE, W. D. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

PENDLETON, GEOFFREY N. See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

PERES, G. Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

PEREYRA, NICOLAS ANTONIO. Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

PÉREZ DE LOS HEROS, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

PERJÉS, ZOLTÁN. Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

PERNIC, D. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

PERRETT, K. M. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

PERRY, THEORDORE S. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

PETERSON, BRADLEY M. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

PETERSON, J. B. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

PETRY, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

PETTINI, MAX. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

PHILLIPS, A. C. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

PHILLIPS, M. M. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

PICHARDO, BÁRBARA. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

PIERSANTI, LUCIANO. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

PIETRZYŃSKI, G. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

PINKNEY, JASON. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

PINSONNEAULT, M. Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription from Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

PIRO, L. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

PISANO, D. J. The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

PLUCINSKY, P. P. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

PODARIU, SILVIU. Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

POHL, A. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

POLLACCO, D. L. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

POLLACK, SCOTT E. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

PONMAN, T. J. The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

POSSENTI, A. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

POWER-MOONEY, B. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

PRATO, L. Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

PREDEHL, P. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

PREECE, ROBERT D. See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

PRICE, P. A. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*. *P. A. Price, S. R. Kulkarni, B. P. Schmidt, T. J. Galama, J. S. Bloom, E. Berger, D. A. Frail, S. G. Djorgovski, D. W. Fox, A. A. Henden, S. Klose, F. A. Harrison, D. E. Reichart, R. Sari, S. A. Yost, T. S. Axelrod, P. McCarthy, J. Holtzman, J. P. Halpern, R. Kimble, J. C. Wheeler, R. A. Chevalier, K. Hurley, G. R. Ricker, E. Costa, F. Frontera, & L. Piro.* 584, 931 (2003)

PRICE, P. B. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

PRICE, PAUL A. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

PRIEDHORSKY, W. C. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

PRIETO, M. ALMUDENA. The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

PRINCE, T. A. Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

PROCHASKA, JASON X. The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)

PROGA, DANIEL. Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

PRZYBILLA, NOBERT. A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A super-giants/footnotemark. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

PRZYBYLSKI, G. T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

PSALTIS, DIMITRIOS. Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

PTAK, A. SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

PUCHNAREWICZ, E. M. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

PUDRITZ, RALPH E. Three-dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

PULS, JOACHIM. Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

PUNSLY, BRIAN. Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)

QIN, BO. Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

QU, JIN LU. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

QUERCELLINI, CLAUDIA. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

QUINN, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.
See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.
See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

QUINN, THOMAS. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

RAGA, ALEJANDRO C. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)
A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

RAJAGURU, S. P. Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

RAKOWSKI, CARA E. Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

RATRA, B. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

RATRA, BHARAT. Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)
Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

RAUSCHER, T. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density.
See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

RAWLINS, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RAY, SUBHARTHI. Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

RAYMOND, JOHN C. Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

RAYMOND, SEAN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

RAYNER, JOHN T. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

REAMES, D. V. Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

REBILLOT, P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

REDFIELD, SETH. Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

REED, M. D. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

REESE, ERIK D. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

REGAN, MICHAEL W. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)
The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

REICHART, D. E. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

REID, I. NEILL. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

REID, M. J. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

REIFARTH, R. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler, P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio.* 582, 1251 (2003)

REIPURTH, BO. X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

REMPEL, MATTHIAS. Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

RENBARGER, T. See NOVAK, G., et al. First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center.

RENZINI, ALVIO. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

RESCONI, E. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RESSLER, M. E. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

RESSLER, MICHAEL E. Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

REST, ARMIN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

REULAND, MICHIEL. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

REYNOLDS, P. T. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

RHODE, W. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RIBORDY, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RICH, R. MICHAEL. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

RICHARDS, A. M. S. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

RICHARDSON, J. D. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

RICHARDSON, L. JEREMY. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

RICHSTONE, DOUGLAS. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

RICHTER, PHILIPP. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

RICHTER, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RICKER, G. R. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

RIDDLE, R. L. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

RIEKE, MARCIA J. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

RIGBY, J. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

ROBERTS, D. A. Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

ROBSON, E. I. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

RODRIGUEZ, L. F. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodriguez, & J. Canto.* 582, L109 (2003)

RODRÍGUEZ, LUIS F. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

RODRÍGUEZ MARTINO, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RÖTTGERING, HUUB. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

ROGERS, B. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

ROIGER, RICHARD J. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

ROMENESKO, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

ROMER, A. KATHY. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

ROS, E. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

ROSE, H. J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

ROSS, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

ROTHSCHILD, R. E. Limits to the Cassetopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

ROTS, A. The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

RUSIN, DAVID. The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

RYAN, J. M. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

RYBICKI, GEORGE B. A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

RYU, DONGSU. Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

SABBI, E. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

SABRA, BASSEM M. Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

SACKMANN, I.-JULIANA. Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

SAFI-HARB, SAMAR. New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

SAGE, LESLIE J. The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

SAHU, KAILASH C. Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

SAITO, MASAO. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

SAKAI, J. I. Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

SAKAI, NOBUYUKI. General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

SAKO, MASAO. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

SAKO, SHIGEYUKI. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

SALARIS, MAURIZIO. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

SALIM, SAMIR. Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

SALVIANDER, SARAH. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

SAMBRUNA, RITA M. Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

SAMUELSON, F. W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

SANDAGE, ALLAN. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

SANDER, H.-G. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SANDFORD, SCOTT A. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

SANIN, ANTON B. See MITROFANOV, IGOR G., et al. Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

SANKRIT, RAVI. Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

SARAZIN, CRAIG L. Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

SARGENT, A. I. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

SARGENT, WALLACE L. W. The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

SARI, R. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

SARI, RE'EM. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

SASSEEN, T. P. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

SATO, JUN'ICHI. The Topology of Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

SAVAGE, BLAIR D. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

SCHAEFER, BRADLEY E. Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

Explaining the Gamma-Ray Burst Distribution. *Bradley E. Schaefer.* 583, L71 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

SCHATZ, HENDRIK. Photodisintegration-Triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

SCHECHTER, PAUL L. The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB. *Paul L. Schechter, A. Udalski, M. Szymański, M. Kubiak, G. Pietrzyński, I. Soszyński, P. Woźniak, K. Zebruń, O. Szewczyk, & Ł. Wyrzykowski.* 584, 657 (2003)

SCHIAVON, R. P. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

SCHILKE, P. From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

SCHILKE, PETER. First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

SCHIRBER, MICHAEL. Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

SCHLATTL, HELMUT. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

SCHMIDT, B. P. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

SCHMIDT, GARY. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

SCHMIDT, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SCHNEIDER, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SCHNEIDER, DONALD P. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

SCHRIJVER, CAROLUS J. The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

SCHROEDTER, M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

SCHUH, S. L. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

SCHWARTZ, D. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

SCHWARZ, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SCHWEITZER, A. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

SCHWEIZER, FRANCOIS. The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

SCIORTINO, S. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

SCOCCIMARRO, ROMÁN. Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

SEAGER, S. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

SEDYSHEV, P. V. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

SEITENZAHL, I. R. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

SEITZER, PATRICK. A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

SEKIGUCHI, MAKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

SEMBACH, KENNETH R. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

SEMBROSKI, G. H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

SEWARD, F. D. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

SHAH, R. Y. Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

SHAHBAZ, T. Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

SHAPIRO, STUART L. Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

SHAPLEY, A. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

SHAPLEY, ALICE E. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

SHEN, B. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

SHEPHERD, D. S. Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

SHETH, KARTIK. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

SHETH, RAVI. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

SHIBATA, KAZUNARI. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

SHIBATA, SHINPEI. General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

SHIELDS, GREGORY A. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

SHIELDS, JOSEPH C. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

SHIGEYAMA, TOSHIKAZU. Relics of Subluminous Supernovae in Metal-Poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

SHIMASAKU, KAZUHIRO. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

SHIOYA, YASUHIRO. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

SHIRLEY, YANCY L. Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

SHOUP, A. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

SHU, FRANK H. Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

SHULL, J. MICHAEL. Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

SIEGEL, MICHAEL H. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

SIEGLER, NICK. Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

SILLS, A. Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription from Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

SILVESTRI, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SIMON, M. Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

SINNIS, C. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

SION, EDWARD M. Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

SKORDIS, CONSTANTINOS. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

SKOUG, R. M. Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

SKRUTSKIE, M. F. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

SLANE, P. O. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

SLANE, PATRICK O. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

SMAIL, IAN. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

SMITH, A. J. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

SMITH, C. W. Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

SMITH, ED. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

SMITH, R. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

SMITH, R. K. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

SNEDEN, CHRISTOPHER. Editorial: ApJ Letters Transitions. *Christopher Sneden.* 582, L3 (2003)

SNELL, RONALD L. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

SNOW, T. P. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

SNOW, THEODOR P. Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodor P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

SNOWDEN, S. L. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

SODERBERG, ALICIA M. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

SOKER, NOAM. Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

SOKOLOSKI, J. L. CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

SOKOLOV, I. V. Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

SOLARZ, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SOLOMON, P. M. Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

SONNABEND, K. The *s*-Process Branching at ^{185}W. *K. Sonnabend, P. Mohr, K. Vogt, A. Zilges, A. Mengoni, T. Rauscher, H. Beer, F. Käppeler, & R. Gallino.* 583, 506 (2003)

SONNENTRUCKER, P. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

SONNENTRUCKER, PAULE. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

SOSZYŃSKI, I. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

SOURADEEP, T. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

SPADARO, D. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

SPARKS, WILLIAM B. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

SPERGEL, D. N. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

SPERGEL, DAVID N. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

SPICZAK, G. M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SPIERING, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SPIROCK, THOMAS. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

SRIRAM, K. Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

STADEL, JOACHIM. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

STANCIL, P. C. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

STANEK, K. Z. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

STARK, D. P. Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

STARRFIELD, SUMNER. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

STEEGHS, D. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

STEELE, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

STEFANIK, R. P. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

STEFFEN, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

STEIDEL, C. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

STEIDEL, CHARLES C. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

STEINACKER, J. Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

STENCEL, R. E. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

STERN, DANIEL. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

STEVENS, J. A. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

STEYERT, DAVID. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

STOKSTAD, R. G. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

STRANIERO, OSCAR. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

STRAUSS, MICHAEL A. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

STUBBS, CHRISTOPHER. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

SUBASAVAGE, JOHN P. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

SUBBARAO, MARK. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

SUBBARAO, MARK. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

SUGAI, H. The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

SUGIYAMA, NAOSHI. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

SULANKE, K.-H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SULLIVAN, G. W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

SUN, M. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

SURIN, LEONID. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

SURPI, G. The Gravitational Lens B1608+656. I. V-, I-, and H-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

SUTHERLAND, R. S. Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

SUTO, YASUSHI. Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

SWANK, JEAN H. New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

SWATERS, R. A. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

SWORDY, S. P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

SZAPUDI, ISTVAN. Cosmological Perturbation Theory Using the Schrödinger Equation. *Istvan Szapudi & Nick Kaiser.* 583, L1 (2003)

SZEWCZYK, O. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

SZKODY, P. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

SZKODY, PAULA. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian R. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

SZYMAŃSKI, M. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

TABACHNIK, SERGE. Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

TABOADA, I. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

TACCONI, LINDA J. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

TAFALLA, MARIO. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

TAKADA, MASAHIRO. The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

TAKAHASHI, TADAYUKI. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

TAKAKUWA, SHIGEHISA. $H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

TAKIZAWA, MOTOKAZU. Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

TAKUBO, SHINYA. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

TAMURA, HAJIME. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

TANIGUCHI, YOSHIAKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

TANIHATA, CHIHARU. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

TANUMA, SYUNITI. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

TATEMATSU, KEN'ICHI. Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

TAYAL, S. S. Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)

TAYLOR, JAMES E. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

TEMPORIN, S. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

TERASHIMA, YUICHI. *Chandra* Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

TESTI, L. Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

TEUBEN, PETER. The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

TEUBEN, PETER J. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

THEIL, D. S. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

THI, W.-F. Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

THOLLANDER, L. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

THOMPSON, M. J. Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

THOMPSON, RODGER I. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

THOMSON, J. R. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

THORBURN, J. A. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules. *J. A. Thorburn, L. M. Hobbs, B. J. McCall, T. Oka, D. E. Welty, S. D. Friedman, T. P. Snow, P. Sonnentrucker, & D. G. York.* 584, 339 (2003)

THORBURN, JULIE A. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

THORWIRTH, SVEN. First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

TIENGO, A. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.

TILAV, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

TINNEY, C. The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

TITLE, ALAN M. The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

TITOV, V. S. Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

TOCCHINI-VALENTINI, DOMENICO. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

TOMITA, KENJI. Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

TOMSICK, J. A. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

TOMSICK, JOHN A. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

TONG, C. H. Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thomp. . R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

TONRY, JOHN L. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

TORNAMBÉ, AMEDEO. Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

TORRELLES, JOSE M. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

TORRES, DIEGO F. Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastian E. Nuza.* 583, L25 (2003)

TORRES, G. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

TOUTAIN, T. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

TOWNSLEY, LEISA. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

TRAN, HIEN D. The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

TRAVAGLIO, C. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

TREAVES, A. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

TREMAINE, SCOTT. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

TRENTI, M. Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

TREU, TOMMASO. The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

TRUDOLYUBOV, SERGEY P. Observations of the X-Ray Afterglows of GRB 011211 and GRB 001025 by *XMM-Newton*. *Konstantin N. Borozdin & Sergey P. Trudolyubov.* 583, L57 (2003)

TRURAN, J. W. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

TSUJIMOTO, TAKUJI. Relics of Subluminous Supernovae in Metal-Poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

TSURU, T. G. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

TUCKER, G. S. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

TÜRLER, MARC. Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

TUMER, T. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

TUMLINSON, JASON. Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

TURNER, EDWIN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

TURNER, EDWIN L. Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

TURNER, T. J. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

TURNER, T. JANE. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

TUROLLA, R. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

TYLENDA, ROMUALD. Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

TZIOUMIS, T. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

TZIOUMIS, TASSO. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

UDALSKI, A. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

UETA, T. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

UMEMOTO, TOMOFUNI. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

UMEMURA, MASAYUKI. Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

UMETSU, KEIICHI. The Topology of Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

URBANEJA, MIGUEL ALEJANDRO. Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

URRY, C. MEGAN. The Independence of Active Galactic Nuclei Black Hole Mass and Radio Loudness: Erratum (ApJ, 581, L5 [2002]). *Jong-Hak Woo & C. Megan Urry.* 583, L47 (2003)

UTTLEY. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

VACCA, WILLIAM D. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

VAN DEN BOSCH, FRANK C. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

VANDERBEI, ROBERT J. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

VAN DER KLIS, M. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.

VAN PUTTEN, MAURICE H. P. M. Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

VAN VLIET, TIMOTHY P. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

VASSILIEV, V. V. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

VASÚTH, MÁTYÁS. Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

VELÁZQUEZ, PABLO F. A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

VENKATESAN, APARNA. Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

VERMEULEN, R. C. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

VIKHLININ, A. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

VINK, JACCO. On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

VIRANI, S. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

VITI, S. Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

VOGEL, STUART N. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

VOGES, WOLFGANG. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

VOGT, K. See SONNABEND, K., et al. The *s*-Process Branching at ^{185}W.

VOGT, STEVEN S. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

VOLOBUYEV, MAXIM. Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

VOLONTERI, MARTA. The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

VRIES, WIM DE. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

WAGNER, R. MARK. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

WAHHAJ, Z. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

WAKELY, S. P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

WALCK, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WALKER, A. R. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

WALKER, G. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

WALMSLEY, C. M. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

WAMBSGANSS, JOACHIM. The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

WANG, C. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

WANG, HAIMIN. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

WANG, K. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

WANG, TING-GUI. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

WANG, YUN. How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

WANG, Z. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

WARD, M. J. X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

WARD, WILLIAM R. The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)

WARDLE, M. Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

WARGELIN, B. J. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

WARNER, C. Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

WARNER, M. R. Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

WARREN, JESSICA S. Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

WARWICK, R. S. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

WASCKO, M. O. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

WASSERBURG, G. J. Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

WASSERMAN, IRA M. SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

WATANABE, JUN-ICHI. Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

WAXMAN, E. Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

WEBB, R. A. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

WEBB, T. M. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Févre, M. Brodwin, & W. Gear.* 582, 6 (2003)

WECK, P. F. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

WEEKES, T. C. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

WEI, F. S. Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

WEINBERG, DAVID H. Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

WEINBERGER, A. J. The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

WEINBERGER, R. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

WEINHEIMER, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WEISS, ACHIM. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

WELCH, GARY A. The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

WELTY, D. E. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

WELTY, DANIEL E. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

WERNER, M. W. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

WEST, S. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

WESTERHOFF, S. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

WHEATON, WM. A. BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)

WHEELER, J. C. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

WHEELER, J. CRAIG. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

WHITE, B. A. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

WHITE, MARTIN. The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

WHITE, RAYMOND E., III. *Chandra* Analysis of Abell 496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

WHITE, RUSSEL J. Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

WIEBUSCH, C. H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WIEDEMANN, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WIEDEMANN, GUENTER. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

WIITA, P. J. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

WIJNANDS, R. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst.

WIJNANDS, RUDY. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

WILCOTS, ERIC M. The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

WILKINSON, D. T. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

WILKINSON, M. I. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

WILLIAMS, D. A. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

WILLIAMS, G. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

WILLIAMS, LILIYA R. Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

WILLMER, C. N. A. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

WILLS, BEVERLY J. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills,*

Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich. 583, 124 (2003)

WILMAN, D. J. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

WILNER, DAVID J. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

WILSON, ANDREW S. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

WILSON, COLLEEN A. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negeuruela.* 584, 996 (2003)

WINGERT, D. W. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

WINN, J. N. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

WINN, JOSHUA N. The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

WINNEWISSER, GISBERT. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

WINTER, LISA. Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

WISCHNEWSKI, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WISSING, H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WOJDOWSKI, PATRICK S. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

WOLF, S. Efficient Radiative Transfer in Dust Grain Mixtures. *S. Wolf.* 582, 859 (2003)

WOLFE, A. M. Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

WOLK, S. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

WOLK, S. J. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

WOLLACK, E. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

WOO, JONG-HAK. The Independence of Active Galactic Nuclei Black Hole Mass and Radio Loudness: Erratum (ApJ, 581, L5 [2002]). *Jong-Hak Woo & C. Megan Urry.* 583, L47 (2003)

WOOD, BRIAN E. Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

WOOD, P. R. On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

WOODWARD, CHARLES E. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

WOSCHNAGG, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WOŹNIAK, P. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

WRIGHT, E. L. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

WRIGHT, JASON T. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

WROBEL, J. M. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

WU, W. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WU, XIANG-PING. The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

WURZ, P. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

WYATT, M. C. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

WYITHE, J. STUART B. The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

WYRZYKOWSKI, L. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

WYRZYKOWSKI, Ł. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

XIE, BINGRONG. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

XU, YAN. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

XUE, YAN-JIE. Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

YAGI, MASAFUMI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

YAMADA, TORU. The Topology of Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

YAMASHITA, TAKUYA. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

YANAGITA, S. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

YANG, T. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

YAQOOB, T. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

YAQOOB, TAHIR. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

YASHIRO, S. A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

YASUDA, NAOKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

YEE, H. K. C. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

YEH, LI-CHEN. On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

YI, SUKYOUNG K. Uncertainties of Synthetic Integrated Colors as Age Indicators. *Sukyoung K. Yi.* 582, 202 (2003)

YODH, G. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

YODH, G. B. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

YOKOYAMA, TAKAAKI. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

YORK, D. G. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

YORK, DONALD G. Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

YOSHIDA, T. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

YOST, S. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

YOUNG, ANDREW J. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

YOUNG, J. S. CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\mathrm{H\ I+H_2}}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

YOUNG, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

YUAN, JUNTAO. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

YUN, MIN S. CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\mathrm{H\ I+H_2}}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

YUSEF-ZADEH, F. Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

ZABLUDOFF, ANN I. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

ZAKAMSKA, NADIA L. Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

ZALDARRIAGA, MATIAS. Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

ZARE, RICHARD N. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

ZARITSKY, DENNIS. On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

ZEBRUŃ, K. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

ZENSUS, J. A. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

ZEZAS, A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

ZHANG, BING. GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

ZHANG, J. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

ZHANG, M. Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

ZHANG, SHUANG NAN. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

ZHANG, YU-YING. The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

ZHAO, HONGSHENG. Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

ZHENG, WEI. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

ZHOU, HONG-YAN. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

ZHOU, YOU-YUAN. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

ZILGES, A. See SONNABEND, K., et al. The *s*-Process Branching at ^{185}W.

ZUCKERMAN, B. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

ZURITA, C. Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

ZWART, SIMON PORTEGIES. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

ZWEIBEL, ELLEN G. Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

SUBJECT INDEX

PARTS 1 & 2, VOLUMES 582–584

2003 JANUARY 1 TO FEBRUARY 20

ACCELERATION OF PARTICLES

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

ACCRETION, ACCRETION DISKS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Three-dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Photodisintegration-Triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negeuruela.* 584, 996 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

ASTROBIOLOGY

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

ASTROCHEMISTRY

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodor P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

ASTROMETRY

Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodriguez, & J. Canto.* 582, L109 (2003)

Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

ATOMIC DATA

Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

ATOMIC PROCESSES

Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)

Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

BLACK HOLE PHYSICS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A Black Hole. *Marc Freitag.* 583, L21 (2003)

Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)

BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

CATALOGS

Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

CELESTIAL MECHANICS

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

COMETS: GENERAL

Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

CONDUCTION

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

CONVECTION

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

COSMIC RAYS: GENERAL

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

COSMOLOGY: COSMIC MICROWAVE BACKGROUND

Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

Cosmological Perturbation Theory Using the Schrödinger Equation. *Istvan Szapudi & Nick Kaiser.* 583, L1 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

Cosmic Needles versus Cosmic Microwave Background Radiation. *Aigen Li.* 584, 593 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

COSMOLOGY: COSMOLOGICAL PARAMETERS

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\ I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

COSMOLOGY: DARK MATTER

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

Exotic Lensing Corrections to the Microlensing Optical Depth. *J. -F. Glicenstein.* 584, 278 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

COSMOLOGY: DIFFUSE RADIATION

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

COSMOLOGY: DISTANCE SCALE

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

COSMOLOGY: EARLY UNIVERSE

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

COSMOLOGY: LARGE-SCALE STRUCTURE OF UNIVERSE

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Mashiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared

Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

COSMOLOGY: OBSERVATIONS

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Févre, M. Brodwin, & W. Gear.* 582, 6 (2003)

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Mashiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

The Topology of Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

COSMOLOGY: THEORY

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

Cosmological Perturbation Theory Using the Schrödinger Equation. *Istvan Szapudi & Nick Kaiser.* 583, L1 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

DIFFUSION

The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

Voyager 1 and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

EARTH

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

EDITORIALS, NOTICES

Editorial: Editorial Transitions. *Robert C. Kennicutt, Jr.* 582, 1 (2003)

Editorial: ApJ Letters Transitions. *Alexander Dalgarno.* 582, L1 (2003)

Editorial: ApJ Letters Transitions. *Christopher Sneden.* 582, L3 (2003)

ERRATA, ADDENDA

Erratum: "The Dynamical Simulations of the Planets Orbiting GJ 876" (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]). *Dana I. Dinescu, Steven R. Majewski, Terrence M. Girard, Réné A. Mendez, Allan Sandage, Michael H. Siegel, William E. Kunkel, John P. Subasavage, & Jamie Ostheimer.* 582, L125 (2003)

Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

The Independence of Active Galactic Nuclei Black Hole Mass and Radio Loudness: Erratum (ApJ, 581, L5 [2002]). *Jong-Hak Woo & C. Megan Urry.* 583, L47 (2003)

Erratum: "Fragmentation of Magnetically Subcritical Clouds into Multiple Supercritical Cores and the Formation of Small Stellar Groups" (ApJ, 578, 256 [2002]). *Zhi-Yun Li & Fumitaka Nakamura.* 583, 1063 (2003) (Orig. paper in 578, 256 (2002))

GALAXIES: ABUNDANCES

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

GALAXIES: ACTIVE

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A., Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

GALAXIES: BL LACERTAE OBJECTS: GENERAL

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

GALAXIES: BL LACERTAE OBJECTS: INDIVIDUAL

Name: Markarian 421

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Name: Markarian 501

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Alphanumeric: 1ES 1959+650

Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope. *J. Holder, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, W. Cui, C. Dowdall, C. Duke, I. de la Calle Perez, A. Falcone, D. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawcynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Mueller, T. N. Nagai, R. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 583, L9 (2003)

Alphanumeric: PKS 2155−304

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

GALAXIES: CLUSTERS: GENERAL

Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark Subbarao, & Donald G. York.* 584, 210 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

GALAXIES: CLUSTERS: INDIVIDUAL

Name: Abell 496

Chandra Analysis of Abell 496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

Name: Coma

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

Alphanumeric: A1795

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

Alphanumeric: A3112

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

STARS: INDIVIDUAL

Constellation Name: V821 Arae

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

GALAXIES: CLUSTERS: INDIVIDUAL

Alphanumeric: IC 1262

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Alphanumeric: MS 1054−03

The Topology of Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

GALAXIES: COOLING FLOWS

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

GALAXIES: DISTANCES AND REDSHIFTS

The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins, F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek.* 582, L5 (2003)

A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A supergiants/footnotemark. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

GALAXIES: DWARF

The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

GALAXIES: ELLIPTICAL AND LENTICULAR, CD

Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

GALAXIES: EVOLUTION

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Févre, M. Brodwin, & W. Gear.* 582, 6 (2003)

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Mashiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

Uncertainties of Synthetic Integrated Colors as Age Indicators. *Sukyoung K. Yi.* 582, 202 (2003)

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henny J. G. L. M. Lamers.* 583, L17 (2003)

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark Subbarao, & Donald G. York.* 584, 210 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

Schechter Versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

GALAXIES: FORMATION

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Févre, M. Brodwin, & W. Gear.* 582, 6 (2003)

The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field North. *A. J. Barger, L. L. Cowei, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

GALAXIES: FUNDAMENTAL PARAMETERS

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

GALAXIES: GENERAL

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

GALAXIES: HALOS

Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

GALAXIES: HIGH-REDSHIFT

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Mashiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

GALAXIES: INDIVIDUAL

Messier Number: M31

Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

Messier Number: M33

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

Messier Number: M51

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Messier Number: M81

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Messier Number: M82

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henny J. G. L. M. Lamers.* 583, L17 (2003)

Messier Number: M87

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

Messier Number: M101

Chandra Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

NGC Number: NGC 253

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

NGC Number: NGC 3783

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A., Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

NGC Number: NGC 4038/4039

The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

NGC Number: NGC 4151

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

NGC Number: NGC 4244

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

NGC Number: NGC 4608

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

NGC Number: NGC 5252

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

NGC Number: NGC 5548

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

NGC Number: NGC 5643

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

NGC Number: NGC 5701

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

NGC Number: NGC 6300

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

Name: Arp 102B

The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

Name: Circinus

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

Name: Markarian 509

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Name: Markarian 766

The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

Name: Sagittarius dSph

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

Name: Sagittarius Dwarf

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

Name: Small Magellanic Cloud

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Alphanumeric: B0218+357

The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

Alphanumeric: B1608+656

The Gravitational Lens B1608+656. I. *V*-, *I*-, and *H*-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

Alphanumeric: 3C 120

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Alphanumeric: 3C 270

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

Alphanumeric: 3C 280

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

Alphanumeric: 3C 390.3

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Alphanumeric: 4C +12.50

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Alphanumeric: IRAS 00317−2142

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

Alphanumeric: IRAS 13451+1232

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Alphanumeric: PKS 1345+12

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Alphanumeric: SMM J14011+0252

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Alphanumeric: SMM J17142+5016

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

GALAXIES: INTERACTIONS

Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

GALAXIES: INTERGALACTIC MEDIUM

The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Chandra Analysis of Abell 496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

GALAXIES: ISM

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins, F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek.* 582, L5 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\ I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

GALAXIES: JETS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

GALAXIES: KINEMATICS AND DYNAMICS

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

GALAXIES: LOCAL GROUP

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

GALAXIES: LUMINOSITY FUNCTION, MASS FUNCTION

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\ I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

GALAXIES: MAGELLANIC CLOUDS

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

GALAXIES: MAGNETIC FIELDS

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

GALAXIES: NUCLEI

Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Fillipenko.* 584, 164 (2003)

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

GALAXIES: PECULIAR

The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

GALAXIES: PHOTOMETRY

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

GALAXIES: QUASARS: ABSORPTION LINES

The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

GALAXIES: QUASARS: EMISSION LINES

The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-Loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

GALAXIES: QUASARS: GENERAL

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverly J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

GALAXIES: QUASARS: INDIVIDUAL

Alphanumeric: BR J0307−4945

Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

Alphanumeric: 3C 254

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

Alphanumeric: 3C 273

Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

Alphanumeric: H1821+643

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Alphanumeric: HE 1104−1805AB

Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB. *Paul L. Schechter, A. Udalski, M. Szymański, M. Kubiak, G. Pietrzyński, I. Soszyński, P. Woźniak, K. Żebruń, O. Szewczyk, & Ł. Wyrzykowski.* 584, 657 (2003)

Alphanumeric: Q0347−3819

Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

Alphanumeric: SDSS J094857.3+002225

SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

GALAXIES: SEYFERT

The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A., Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

GALAXIES: SPIRAL

Chandra Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

GALAXIES: STARBURST

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Févre, M. Brodwin, & W. Gear.* 582, 6 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henny J. G. L. M. Lamers.* 583, L17 (2003)

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

GALAXIES: STAR CLUSTERS

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henny J. G. L. M. Lamers.* 583, L17 (2003)

GALAXIES: STATISTICS

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

GALAXIES: STELLAR CONTENT

A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A supergiants/footnotemark. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark Subbarao, & Donald G. York.* 584, 210 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

GALAXIES: STRUCTURE

Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

Schechter Versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

GALAXY: ABUNDANCES

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

GALAXY: CENTER

The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

GALAXY: DISK

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

GALAXY: GENERAL

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

GALAXY: GLOBULAR CLUSTERS: GENERAL

Uncertainties of Synthetic Integrated Colors as Age Indicators. *Sukyoung K. Yi.* 582, 202 (2003)

Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

GALAXY: GLOBULAR CLUSTERS: INDIVIDUAL

Messier Number: M15

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

NGC Number: NGC 6397

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

GALAXY: HALO

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

GALAXY: KINEMATICS AND DYNAMICS

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

GALAXY: NUCLEUS

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A Black Hole. *Marc Freitag.* 583, L21 (2003)

GALAXY: OPEN CLUSTERS AND ASSOCIATIONS: GENERAL

Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription from Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

GALAXY: OPEN CLUSTERS AND ASSOCIATIONS: INDIVIDUAL

Name: NGC 2024

Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

Name: Coma

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

Name: Orion Nebula Cluster

Chandra X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Name: α Persei

Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

Name: Pleiades

Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

Name: Taurus-Auriga

Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

Name: Ursa Major Group

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

GALAXY: SOLAR NEIGHBORHOOD

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

GALAXY: STELLAR CONTENT

Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

GALAXY: STRUCTURE

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Dominguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

GAMMA RAYS: BURSTS

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins, F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek.* 582, L5 (2003)

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito. *R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, D. Evans, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, S. Klein, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, F. W. Samuelson, B. Shen, A. Shoup, C. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 583, 824 (2003)

Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

Observations of the X-Ray Afterglows of GRB 011211 and GRB 001025 by *XMM-Newton*. *Konstantin N. Borozdin & Sergey P. Trudolyubov.* 583, L57 (2003)

The Strongly Polarized Afterglow of GRB 020405. *D. Bersier, B. McLeod, P. M. Garnavich, M. J. Holman, T. Gray, J. Quinn, J. Kaluzny, P. M. Challis, R. G. Bower, D. J. Wilman, J. S. Heyl, S. T. Holland, V. Hradecky, S. Jha, & K. Z. Stanek.* 583, L63 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

Explaining the Gamma-Ray Burst Distribution. *Bradley E. Schaefer.* 583, L71 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

Comparison of Redshift-Known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events. *Igor G. Mitrofanov, Anton B. Sanin, Dmitrij S. Anfimov, Maxim L. Litvak, Michael S. Briggs, William S. Paciesas, Geoffrey N. Pendleton, Robert D. Preece, & Charles A. Meegan.* 584, 904 (2003)

GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*. *P. A. Price, S. R. Kulkarni, B. P. Schmidt, T. J. Galama, J. S. Bloom, E. Berger, D. A. Frail, S. G. Djorgovski, D. W. Fox, A. A. Henden, S. Klose, F. A. Harrison, D. E. Reichart, R. Sari, S. A. Yost, T. S. Axelrod, P. McCarthy, J. Holtzman, J. P. Halpern, R. Kimble, J. C. Wheeler, R. A. Chevalier, K. Hurley, G. R. Ricker, E. Costa, F. Frontera, & L. Piro.* 584, 931 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability. *D. Bersier, K. Z. Stanek, J. N. Winn, T. Grav, M. J. Holman, T. Matheson, B. Mochejska, D. Steeghs, A. R. Walker, P. M. Garnavich, J. Quinn, S. Jha, K. H. Cook, W. W. Craig, P. J. Meintjes, & J. J. Calitz.* 584, L43 (2003)

Optical Spectropolarimetry of the GRB 020813 Afterglow. *Aaron J. Barth, Re'em Sari, Marshall H. Cohen, Robert W. Goodrich, Paul A. Price, Derek W. Fox, J. S. Bloom, Alicia M. Soderberg, & Shrinivas R. Kulakarni.* 584, L47 (2003)

GAMMA RAYS: OBSERVATIONS

Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope. *J. Holder, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, W. Cui, C. Dowdall, C. Duke, I. de la Calle Perez, A. Falcone, D. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawcynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Mueller, T. N. Nagai, R. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 583, L9 (2003)

Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastian E. Nuza.* 583, L25 (2003)

The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito. *R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, D. Evans, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, S. Klein, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, F. W. Samuelson, B. Shen, A. Shoup, C. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 583, 824 (2003)

Search for TeV Emissions from Pulsars in Binary Systems. *T. A. Hall, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, S. Dunlea, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, G. H. Gillanders, A. M. Hillas, D. Horan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, J. Quinn, P. T. Reynolds, H. J. Rose, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, & T. C. Weekes.* 583, 853 (2003)

BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

GAMMA RAYS: THEORY

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastian E. Nuza.* 583, L25 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

GRAVITATION

Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

GRAVITATIONAL LENSING

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

The Topology of Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

The Gravitational Lens B1608+656. I. V-, I-, and H-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

Exotic Lensing Corrections to the Microlensing Optical Depth. *J. -F. Glicenstein.* 584, 278 (2003)

Schechter Versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB. *Paul L. Schechter, A. Udalski, M. Szymański, M. Kubiak, G. Pietrzyński, I. Soszyński, P. Woźniak, K. Żebruń, O. Szewczyk, & Ł. Wyrzykowski.* 584, 657 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

GRAVITATIONAL WAVES

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A Black Hole. *Marc Freitag.* 583, L21 (2003)

Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

HYDRODYNAMICS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

INFRARED: GALAXIES

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

INFRARED: ISM

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

INFRARED: SOLAR SYSTEM

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe. S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

INFRARED: STARS

FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

INSTABILITIES

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

INSTRUMENTATION: ADAPTIVE OPTICS

Suppression of Speckle Noise by Speckle Pinning in Adaptive Optics. *E. E. Bloemhof.* 582, L59 (2003)

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

INSTRUMENTATION: INTERFEROMETERS

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

INSTRUMENTATION: MISCELLANEOUS

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

INSTRUMENTATION: POLARIMETERS

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

INTERGALACTIC MEDIUM

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

INTERPLANETARY MEDIUM

Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

ISM: ABUNDANCES

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

ISM: ATOMS

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

ISM: BUBBLES

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

ISM: CLOUDS

Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodor P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

ISM: COSMIC RAYS

The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

Voyager 1 and 2 Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

ISM: DUST, EXTINCTION

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Févre, M. Brodwin, & W. Gear.* 582, 6 (2003)

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

The Gravitational Lens B1608+656. I. *V*-, *I*-, and *H*-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Cosmic Needles versus Cosmic Microwave Background Radiation. *Aigen Li.* 584, 593 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

ISM: EVOLUTION

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

ISM: GENERAL

A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

ISM: GLOBULES

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

ISM: H II REGIONS

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi*

Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka. 584, 368 (2003)

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

ISM: INDIVIDUAL

Name: Cassiopeia A

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Name: Cygnus Loop

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

Name: 30 Doradus

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

Name: Kesteven 79

A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

Name: Large Magellanic Cloud

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Name: Local Interstellar Cloud

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

Name: ρ Ophiuchi

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

Name: Perseus Molecular Cloud

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Name: Taurus Cloud Complex

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

NGC Number: NGC 1333 Molecular Cloud

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

Alphanumeric: B335

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Alphanumeric: G292.0+1.8

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

Alphanumeric: IC 443

The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

Alphanumeric: K3-50A

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Alphanumeric: L1551

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Alphanumeric: MSH 11−54

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

Alphanumeric: N63A

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

Alphanumeric: N103B

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Alphanumeric: PSR J1124−5916

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

Alphanumeric: TMC-1C

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

Alphanumeric: W3

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Alphanumeric: W43

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

ISM: JETS AND OUTFLOWS

The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

Three-dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodriguez, & J. Canto.* 582, L109 (2003)

Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

ISM: KINEMATICS AND DYNAMICS

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Scintillations and Levy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

ISM: LINES AND BANDS

Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules. *J. A. Thorburn, L. M. Hobbs, B. J. McCall, T. Oka, D. E. Welty, S. D. Friedman, T. P. Snow, P. Sonnentrucker, & D. G. York.* 584, 339 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

ISM: MAGNETIC FIELDS

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

ISM: MOLECULES

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Observations of C_3 in Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodor P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules. *J. A. Thorburn, L. M. Hobbs, B. J. McCall, T. Oka, D. E. Welty, S. D. Friedman, T. P. Snow, P. Sonnentrucker, & D. G. York.* 584, 339 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

ISM: PLANETARY NEBULAE: GENERAL

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

ISM: PLANETARY NEBULAE: INDIVIDUAL

NGC Number: NGC 7027

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

ISM: STRUCTURE

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Scintillations and Levy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

ISM: SUPERNOVA REMNANTS

Limits to the Cassiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)
A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)
A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)
On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)
Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

KUIPER BELT

The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)

LINE: FORMATION

Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)
Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)
The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)
Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)
Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)
Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

LINE: IDENTIFICATION

Metal Abundances and Kinematics of Quasar Absorbers. II. Absroption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)
FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)
First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)
High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

LINE: PROFILES

The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)
Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)
Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)
Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

MAGNETIC FIELDS

Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)
Voyager 1 and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)
Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)
On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)
Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)
Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

MAGNETOHYDRODYNAMICS: MHD

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)
Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)
Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)
Three-dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)
Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)
A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)
Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)
Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)
The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)
Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)
Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)
Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)
Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)
Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)
Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)
Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)
The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)
Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)
Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

MASERS

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)
The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)
Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)
A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

METEORS, METEOROIDS

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

METHODS: ANALYTICAL

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

METHODS: DATA ANALYSIS

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

METHODS: LABORATORY

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler, P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio.* 582, 1251 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

The *s*-Process Branching at ^{185}W. *K. Sonnabend, P. Mohr, K. Vogt, A. Zilges, A. Mengoni, T. Rauscher, H. Beer, F. Käppeler, & R. Gallino.* 583, 506 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

METHODS: MISCELLANEOUS

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

METHODS: *N*-BODY SIMULATIONS

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

METHODS: NUMERICAL

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

Efficient Radiative Transfer in Dust Grain Mixtures. *S. Wolf.* 582, 859 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

METHODS: STATISTICAL

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Cosmological Perturbation Theory Using the Schrödinger Equation. *Istvan Szapudi & Nick Kaiser.* 583, L1 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

MOLECULAR DATA

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

MOLECULAR PROCESSES

Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

NEUTRINOS

Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Search for Point Sources of High-Energy Neutrinos with AMANDA. *J. Ahrens, X. Bai, G. Barouch, S. W. Barwick, R. C. Bay, T. Becka, K.-H. Becker, D. Bertrand, F. Binon, A. Biron, S. Boeser, O. Botner, A. Bouchta, O. Bouhali, T. Burgess, S. Carius, T. Castermans, D. Chirkin, J. Conrad, J. Cooley, D. F. Cowen, A. Davour, C. De Clercq, T. DeYoung, P. Desiati, J.-P. Dewulf, P. Doksus, J. Edsjö, P. Ekström, T. Feser, T. K. Gaisser, M. Gaug, L. Gerhardt, A. Goldschmidt, A. Hallgren, F. Halzen, K. Hanson, R. Hardtke, T. Hauschildt, M. Hellwig, P. Herquet, G. C. Hill, P. O. Hulth, K. Hultqvist, S. Hundertmark, J. Jacobsen, A. Karle, J. Kim, L. Köpke, M. Kowalski, K. Kuehn, J. I. Lamoureux, H. Leich, M. Leuthold, P. Lindahl, J. Madsen, P. Marciniewski, H. Matis, C. P. McParland, T. C. Miller, Y. Minaeva, P. Miočinović, P. C. Mock, R. Morse, T. Neunhöffer, P. Niessen, D. R. Nygren, H. Ögelman, P. Olbrechts,*

C. Pérez de los Heros, A. C. Pohl, P. B. Price, G. T. Przybylski, K. Rawlins, E. Resconi, W. Rhode, M. Ribordy, S. Richter, J. Rodríguez Martino, P. Romenesko, D. Ross, H.-G. Sander, T. Schmidt, D. Schneider, R. Schwarz, A. Silvestri, M. Solarz, G. M. Spiczak, C. Spiering, D. Steele, P. Steffen, R. G. Stokstad, K.-H. Sulanke, I. Taboada, L. Thollander, S. Tilav, C. Walck, C. Weinheimer, C. H. Wiebusch, C. Wiedemann, R. Wischnewski, H. Wissing, K. Woschnagg, W. Wu, G. Yodh, & S. Young (The AMANDA Collaboration). 583, 1040 (2003)

NUCLEAR REACTIONS

Relics of Subluminous Supernovae in Metal-Poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

NUCLEAR REACTIONS, NUCLEOSYNTHESIS, ABUNDANCES

Limits to the Cassеiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

Observed and Physical Properties of Core-Collapse Supernovae. *Maroi Hamuy.* 582, 905 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler, P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio.* 582, 1251 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

The *s*-Process Branching at ^{185}W. *K. Sonnabend, P. Mohr, K. Vogt, A. Zilges, A. Mengoni, T. Rauscher, H. Beer, F. Käppeler, & R. Gallino.* 583, 506 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Photodisintegration-Triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

NUCLEOSYNTHESIS

Relics of Subluminous Supernovae in Metal-Poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

PLANETS AND SATELLITES: FORMATION

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

PLANETS AND SATELLITES: INDIVIDUAL

Epsilon Ring

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

Mars

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

Titan

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Uranus

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

PLASMAS

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

POLARIZATION

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

The Strongly Polarized Afterglow of GRB 020405. *D. Bersier, B. McLeod, P. M. Garnavich, M. J. Holman, T. Grav, J. Quinn, J. Kaluzny, P. M. Challis, R. G. Bower, D. J. Wilman, J. S. Heyl, S. T. Holland, V. Hradecky, S. Jha, & K. Z. Stanek.* 583, L63 (2003)

First Results from SPARO: Evidence for Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

Optical Spectropolarimetry of the GRB 020813 Afterglow. *Aaron J. Barth, Re'em Sari, Marshall H. Cohen, Robert W. Goodrich, Paul A. Price, Derek W. Fox, J. S. Bloom, Alicia M. Soderberg, & Shrinivas R. Kulakarni.* 584, L47 (2003)

PULSARS

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

RADIATION MECHANISMS: GENERAL

A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

RADIATION MECHANISMS: NONTHERMAL

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

RADIATION MECHANISMS: THERMAL

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

RADIATIVE TRANSFER

Efficient Radiative Transfer in Dust Grain Mixtures. *S. Wolf.* 582, 859 (2003)

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

RADIO CONTINUUM: GALAXIES

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

RADIO CONTINUUM: GENERAL

A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

RADIO CONTINUUM: ISM

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

RADIO CONTINUUM: STARS

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

RADIO LINES: GALAXIES

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

RADIO LINES: ISM

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\mathrm{H\,I+H_2}}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Chemistry and Dynamics in Pre-Protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

RADIO LINES: STARS

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

RELATIVITY

Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

SCATTERING

Efficient Radiative Transfer in Dust Grain Mixtures. *S. Wolf.* 582, 859 (2003)

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

SHOCK WAVES

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

SOLAR SYSTEM: FORMATION

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)

SOLAR SYSTEM: GENERAL

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

SPACE VEHICLES: INSTRUMENTS

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

STARS: ABUNDANCES

Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

Relics of Subluminous Supernovae in Metal-Poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

STARS: ACTIVITY

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

STARS: AGB AND POST-AGB

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

STARS: ATMOSPHERES

The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

STARS: BINARIES: CLOSE

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription from Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Mendez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negeuruela.* 584, 996 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

STARS: BINARIES: ECLIPSING

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

STARS: BINARIES: GENERAL

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

STARS: BINARIES: SPECTROSCOPIC

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

STARS: BINARIES: SYMBIOTIC

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

STARS: BINARIES: VISUAL

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

STARS: CARBON

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

STARS: CIRCUMSTELLAR MATTER

The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

Efficient Radiative Transfer in Dust Grain Mixtures. *S. Wolf.* 582, 859 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

A Flared, Orbiting, Dusty Disk around HD 233517. *M. Jura.* 582, 1032 (2003)

Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

A Tidally Disrupted Asteroid around the White Dwarf G29-38. *M. Jura.* 584, L91 (2003)

STARS: CORONAE

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

STARS: EARLY-TYPE

A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A supergiants/footnotemark. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

STARS: EVOLUTION

Post–Main-Sequence Changes in Rotational Velocities. *Helmut A. Abt.* 582, 420 (2003)

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

STARS: FLARE

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

STARS: FORMATION

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark Subbarao, & Donald G. York.* 584, 210 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

STARS: FUNDAMENTAL PARAMETERS

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

STARS: HORIZONTAL-BRANCH

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Ostensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

STARS: IMAGING

Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

STARS: INDIVIDUAL

Constellation Name: VY Aquarii

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Constellation Name: CI Aquilae

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

Constellation Name: V605 Aquilae

Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

Constellation Name: V1494 Aquilae

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

Constellation Name: WW Ceti

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Constellation Name: WX Ceti

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Constellation Name: Cygnus X-1

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

Constellation Name: CH Cygni

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Constellation Name: EM Cygni

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Constellation Name: V404 Cygni

Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

Constellation Name: σ Herculis

The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

Constellation Name: AD Leonis

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Constellation Name: CZ Orionis

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Constellation Name: β Pictoris

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

Constellation Name: FG Sagittae

Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

Constellation Name: RR Telescopii

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

Constellation Name: DW Ursae Majoris

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Constellation Name: UX Ursae Majoris

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

Henry Draper Number: HD 5980

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

Henry Draper Number: HD 37124

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 49674

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 72659

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 108874

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 114729

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 116852

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Henry Draper Number: HD 128311

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 145675

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 209458

Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

Henry Draper Number: HDE 226868

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

Name: Fomalhaut

Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

Name: Sakurai's Object

Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

Name: Vega

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Alphanumeric: CRL 618

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Alphanumeric: GRS 1915+105

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

Alphanumeric: L1551 IRS 5

Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

Alphanumeric: PG 1716+426

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Ostensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

Alphanumeric: PSR J1846−02558

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Alphanumeric: 2S 0921−63

Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Alphanumeric: SDSS J132411.57+032050.5

Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian R. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Alphanumeric: SDSS J155331.12+551614.5

Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian F. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Alphanumeric: SGR 1806−20

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

Alphanumeric: 4U 1636−53

Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Alphanumeric: 4U 1705−44

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Alphanumeric: 1WGA J1216.9+3743

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Alphanumeric: WL 16

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

Alphanumeric: XTE J1550−564

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

Alphanumeric: XTE J1550−1564

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Alphanumeric: YLW 15

Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodriguez, & J. Canto.* 582, L109 (2003)

STARS: INTERIORS

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Ostensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

STARS: KINEMATICS

Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

STARS: LATE-TYPE

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler,*

P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio. 582, 1251 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

STARS: LOW-MASS, BROWN DWARFS

FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

STARS: LUMINOSITY FUNCTION, MASS FUNCTION

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

STARS: MAGNETIC FIELDS

Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

STARS: MASS LOSS

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

A Flared, Orbiting, Dusty Disk around HD 233517. *M. Jura.* 582, 1032 (2003)

Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

STARS: NEUTRON

Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Photodisintegration-Triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Mendez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Origin and Interpretation of Kilohertz QPOs from Strange Stars in X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

STARS: NOVAE, CATACLYSMIC VARIABLES

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription from Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian R. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

STARS: OSCILLATIONS

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Ostensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

STARS: PLANETARY SYSTEMS

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

STARS: PLANETARY SYSTEMS: FORMATION

The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

STARS: PLANETARY SYSTEMS: PROTOPLANETARY DISKS

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

STARS: PRE–MAIN-SEQUENCE

Three-dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

STARS: PULSARS: GENERAL

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastian E. Nuza.* 583, L25 (2003)

Search for TeV Emissions from Pulsars in Binary Systems. *T. A. Hall, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, S. Dunlea, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, G. H. Gillanders, A. M. Hillas, D. Horan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, J. Quinn, P. T. Reynolds, H. J. Rose, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, & T. C. Weekes.* 583, 853 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Mendez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

A CLEAN-Based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

STARS: PULSARS: INDIVIDUAL

Name: Centaurus X-3

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

Alphanumeric: PSR J0108−1431

Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

Alphanumeric: PSR J1643−1224

A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

Alphanumeric: PSR J1740+5340

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

Alphanumeric: PSR J1846−0258

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Alphanumeric: XTE J1751−305

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Mendez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

STARS: ROTATION

Post–Main-Sequence Changes in Rotational Velocities. *Helmut A. Abt.* 582, 420 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

STARS: STATISTICS

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

STARS: SUBDWARFS

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Ostensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

STARS: SUPERGIANTS

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

STARS: SUPERNOVAE: GENERAL

The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

Observed and Physical Properties of Core-Collapse Supernovae. *Maroi Hamuy.* 582, 905 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

STARS: SUPERNOVAE: INDIVIDUAL

Alphanumeric: G29.7−0.3

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Alphanumeric: SN 1993J

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Alphanumeric: SN 2001ke

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

STARS: VARIABLES: OTHER

Chandra, Extreme Ultraviolet Explorer, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Sakurai's Object, V605 Aquilae, and FG Sagittae: An Evolutionary Sequence Revealed. *T. M. Lawlor & J. MacDonald.* 583, 913 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

STARS: WHITE DWARFS

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison Between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Mendez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

A Tidally Disrupted Asteroid around the White Dwarf G29-38. *M. Jura.* 584, L91 (2003)

STARS: WINDS, OUTFLOWS

Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

Quantitative Sepctral Analyasis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

STELLAR DYNAMICS

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A Black Hole. *Marc Freitag.* 583, L21 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

SUBMILLIMETER

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Févre, M. Brodwin, & W. Gear.* 582, 6 (2003)

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

SUN: ABUNDANCES

Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

SUN: ACTIVITY

Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

SUN: ATMOSPHERE

Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

SUN: ATMOSPHERIC MOTIONS

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

SUN: CHROMOSPHERE

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

SUN: CORONA

Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

SUN: CORONAL MASS EJECTIONS (CMES)

Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

SUN: EVOLUTION

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

SUN: FILAMENTS

The Formation of a Prominence in NOAA Active Region 8668. II. Trace Observations of Jets and Eruptions Associated with Cancelling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

SUN: FLARES

Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

SUN: HELIOSEISMOLOGY

Acoustic Wave Propagation in the Sun: Implications for Wavefield and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

SUN: INTERIOR

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

SUN: MAGNETIC FIELDS

A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

The Formation of a Prominence in NOAA Active Region 8668. II. Trace Observations of Jets and Eruptions Associated with Cancelling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

SUN: OSCILLATIONS

Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

SUN: PARTICLE EMISSION

Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

SUN: PHOTOSPHERE

Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

The Formation of a Prominence in NOAA Active Region 8668. II. Trace Observations of Jets and Eruptions Associated with Cancelling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

SUN: PROMINENCES

Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

The Formation of a Prominence in NOAA Active Region 8668. II. Trace Observations of Jets and Eruptions Associated with Cancelling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

SUN: RADIO RADIATION

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

SUN: SOLAR-TERRESTRIAL RELATIONS

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

SUN: SOLAR WIND

Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

Voyager 1 and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

SUN: SUNSPOTS

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

SUN: TRANSITION REGION

A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

SUN: UV RADIATION

A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

SURVEYS

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\mathrm{H\,I+H_2}}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

Search for Point Sources of High-Energy Neutrinos with AMANDA. *J. Ahrens, X. Bai, G. Barouch, S. W. Barwick, R. C. Bay, T. Becka, K.-H. Becker, D. Bertrand, F. Binon, A. Biron, S. Boeser, O. Botner, A. Bouchta, O. Bouhali, T. Burgess, S. Carius, T. Castermans, D. Chirkin, J. Conrad, J. Cooley, D. F. Cowen, A. Davour, C. De Clercq, T. DeYoung, P. Desiati, J.-P. Dewulf, P. Doksus, J. Edsjö, P. Ekström, T. Feser, T. K. Gaisser, M. Gaug, L. Gerhardt, A. Goldschmidt, A. Hallgren, F. Halzen, K. Hanson, R. Hardtke, T. Hauschildt, M. Hellwig, P. Herquet, G. C. Hill, P. O. Hulth, K. Hultqvist, S. Hundertmark, J. Jacobsen, A. Karle, J. Kim, L. Köpke, M. Kowalski, K. Kuehn, J. I. Lamoureux, H. Leich, M. Leuthold, P. Lindahl, J. Madsen, P. Marciniewski, H. Matis, C. P. McParland, T. C. Miller, Y. Minaeva, P. Miocinović, P. C. Mock, R. Morse, T. Neunhöffer, P. Niessen, D. R. Nygren, H. Ögelman, P. Olbrechts, C. Pérez de los Heros, A. C. Pohl, P. B. Price, G. T. Przybylski, K. Rawlins, E. Resconi, W. Rhode, M. Ribordy, S. Richter, J. Rodríguez Martino, P. Romenesko, D. Ross, H.-G. Sander, T. Schmidt, D. Schneider, R. Schwarz, A. Silvestri, M. Solarz, G. M. Spiczak, C. Spiering, D. Steele, P. Steffen, R. G. Stokstad, K.-H. Sulanke, I. Taboada, L. Thollander, S. Tilav, C. Walck, C. Weinheimer, C. H. Wiebusch, C. Wiedemann, R. Wischnewski, H. Wissing, K. Woschnagg, W. Wu, G. Yodh, & S. Young (The AMANDA Collaboration).* 583, 1040 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J. -S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark Subbarao, & Donald G. York.* 584, 210 (2003)

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

TECHNIQUES: INTERFEROMETRIC

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

TECHNIQUES: PHOTOMETRIC

The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

TECHNIQUES: SPECTROSCOPIC

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

TURBULENCE

Suppression of Speckle Noise by Speckle Pinning in Adaptive Optics. *E. E. Bloemhof.* 582, L59 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Scintillations and Levy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

ULTRAVIOLET: GALAXIES

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N.*

Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A., Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng. 583, 178 (2003)

Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Rnady A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

ULTRAVIOLET: GENERAL

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

ULTRAVIOLET: ISM

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

ULTRAVIOLET: STARS

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

WAVES

Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)

X-RAYS: BINARIES

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTA J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Mendez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negeuruela.* 584, 996 (2003)

X-RAYS: BURSTS

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Photodisintegration-Triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

X-RAYS: DIFFUSE BACKGROUND

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

X-RAYS: GALAXIES

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Chandra Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

The Time-Variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Uttley, Rick Edelson, Ian M. Hardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

X-RAYS: GALAXIES: CLUSTERS

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Chandra Analysis of Abell 496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

X-RAYS: GENERAL

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

X-RAYS: INDIVIDUAL

Constellation Name: Cassiopeia A

Limits to the Casseiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

Alphanumeric: M33 X-8

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

Alphanumeric: 2S 0921−63

Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

X-RAYS: ISM

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

X-RAYS: STARS

Chandra X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)